

The PREFACE.

What the things are I observ'd, the following descriptions will manifest; in brief, they were either exceeding small Bodies, or exceeding small Pores, or exceeding small Motions, some of each of which the Reader will find in the following Notes, and such, as I presume, (many of them at least) will be new, and perhaps not less strange: Some specimen of each of which Heads the Reader will find in the subsequent delineations, and indeed of some more then I was willing there should be; which was occasioned by my first Intentions to print a much greater number then I have since found time to compleat. Of such therefore as I had, I select'd only some few of every Head, which for some particulars seem'd most observable, rejecting the rest as superfluous to the present Design.

What each of the delineated Subjects are, the following descriptions annex to each will inform, of which I shall here, only once for all, add, That in divers of them the Gravers have pretty well follow'd my directions and draughts; and that in making of them, I endeavour'd (as far as I was able) first to discover the true appearance, and next to make a plain representation of it. This I mention the rather, because of these kind of Objects there is much more difficulty to discover the true shape, then of those visible to the naked eye, the same Object seeming quite differing, in one position to the Light, from what it really is, and may be discover'd in another. And therefore I never began to make any draught before by many examinations in several lights, and in several positions to those lights, I had discover'd the true form. For it is exceeding difficult in some Objects, to distinguish between a prominency and a depression, between a shadow and a black stain, or a reflection and a whiteness in the colour. Besides, the transparency of most Objects renders them yet much more difficult then if they were opacous. The Eyes of a Fly in one kind of light appear almost like a Lattice, drill'd through with abundance of small holes; which probably may be the Reason, why the Ingenious Dr. Power seems to suppose them such. In the Sunshine they look like a Surface cover'd with golden Nails; in another posture, like a Surface cover'd with Pyramids; in another with Cones; and in other postures of quite other shapes; but that which exhibits the best, is the Light collected on the Object, by those means I have already describ'd.

And

The PREFACE.

And this was undertaken in prosecution of the Design which the ROYAL SOCIETY has propos'd to it self. For the Members of the Assembly having before their eyes so many fatal Instances of the errors and falsehoods, in which the greatest part of mankind has so long wandred, because they rely'd upon the strength of humane Reason alone, have begun anew to correct all Hypotheses by sense, as Seamen do their dead Reckonings by Cœlestial Observations; and to this purpose it has been their principal endeavour to enlarge & strengthen the Senses by Medicine, and by such outward Instruments as are proper for their particular works. By this means they find some reason to suspect, that those effects of Bodies, which have been commonly attributed to Qualities, and those confess'd to be occult, are perform'd by the small Machines of Nature, which are not to be discern'd without these helps, seeming the meer products of Motion, Figure, and Magnitude; and that the Natural Textures, which some call the Plastick faculty, may be made in Looms, which a greater perfection of Opticks may make discernable by these Glasses: so as now they are no more puzzled about them, then the vulgar are to conceive, how Tapestry or flowred Stuffs are woven. And the ends of all these Inquiries they intend to be the Pleasure of Contemplative minds, but above all, the ease and dispatch of the labours of mens hands. They do indeed neglect no opportunity to bring all the rare things of Remote Countries within the compass of their knowledge and practice. But they still acknowledg their most useful Informations to arise from common things, and from diversifying their most ordinary operations upon them. They do not wholly reject Experiments of meer light and theory; but they principally aim at such, whose Applications will improve and facilitate the present way of Manual Arts. And though some men, who are perhaps taken up about less honourable Employments, are pleas'd to censure their proceedings, yet they can shew more fruits of their first three years, wherein they have assembled, then any other Society in Europe can for a much larger space of time. 'Tis true, such undertakings as theirs do commonly meet with small encouragement, because men are generally rather taken with the plausible and discursive, then the real and the solid part of Philosophy; yet by the good fortune of their institution, in an Age of all others the most inquisitive, they have been assisted by the contribution and presence of very many of the chief Nobility and Gentry,

g
and